Moringa stenopetala (Bak.) Cuf.

Moringaceae

LOCAL NAMES
Amharic (shifara,haleko); English (cabbage tree)

BOTANIC DESCRIPTION
Moringa stenopetala is a tree 6-12 m tall having a diameter of 60cm (DBH) and a smooth bark; its crown is strongly branched, sometimes with several trunks, and its wood is soft.

The leaves are bi- or tri-pinnate, with about 5 pairs of pinnae and 3-9 elliptic to ovate leaflets per pinna.

The flowers are very fragrant with cream flushed pink sepals, white, pale yellow or yellow-green petals, white filaments and yellow anthers. The ovary is ovoid and densely hairy.

Pods are elongate reddish with greyish bloom having grooved valves.

Bole (TopTropicals.com)

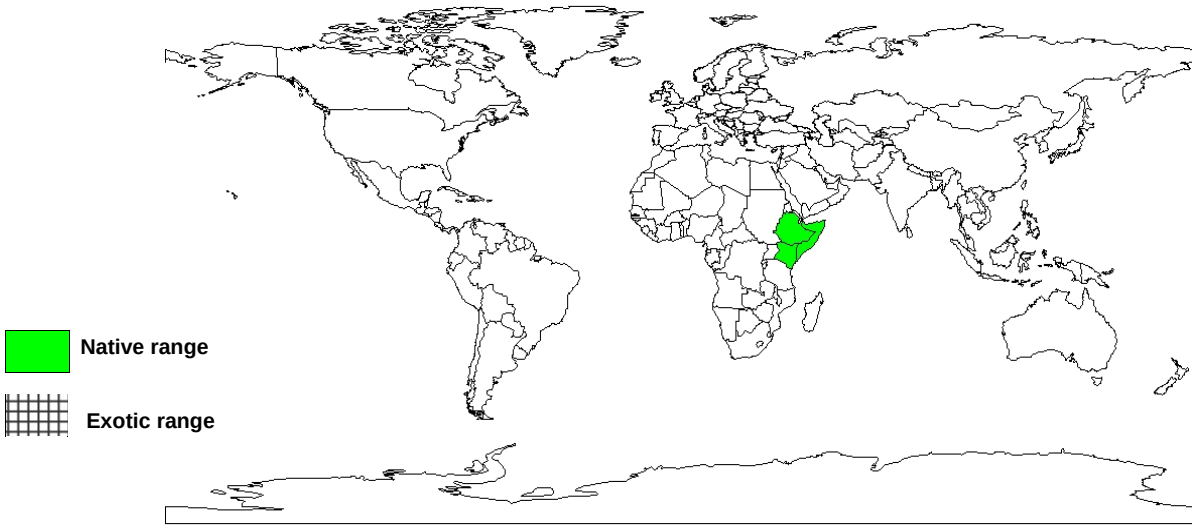
leaves (TopTropicals.com)

ECOLOGY
M. stenopetala grows naturally in the Acacia tortilis-Delonix elata-Commiphora spp. vegetation-complex. This type of vegetation is often found in well-drained soils at altitudes of
900-1200 m. The species is quite drought resistant. In southern Ethiopia, it has been found in areas of me an annual rainfall ranging from 500-1400mm. Cold temperatures are limiting factor for the cultivation of the species in Ethiopia because it does not tolerate frost.

BIOPHYSICAL LIMITS
Altitude: 400-2100 m.
Mean annual temperature: 24-30 deg C.
Mean annual rainfall: 500-1400 mm
Soil type: The species does not have any specific soil requirements, except it does not grow on waterlogged or swampy soils. The soil PH ranges from acidic to alkaline but mostly exhibit neutral reaction.

DOCUMENTED SPECIES DISTRIBUTION

Native: Ethiopia, Kenya, Somalia
Exotic:



The map above shows countries where the species has been planted. It does neither suggest that the species can be planted in every ecological zone within that country, nor that the species can not be planted in other countries than those depicted. Since some tree species are invasive, you need to follow biosafety procedures that apply to your planting site.

PRODUCTS
Food: The leaves and fruits are eaten as vegetables and are rich in proteins, calcium, iron, phosphorous as well as vitamins A and C.

Fodder: The use of leaves and pods for animal fodder is currently of minor importance compared to their use for human consumption. Yet, due to their high protein content this is a promising potential use.

Fuel: Growing rapidly, these trees have softwood that is not particularly suitable for fuel. But because the supplies are so scarce, it is often used as a fuel in its natural range.

SERVICES
Ornamental: It is a valued ornamental in its natural range.

Boundary or barrier or support: It serves as a live fence in areas of its natural range.

Intercropping: The species is grown in mixed multi-storey stands with food crops. The home gardens in Ethiopia (Arba Minch area) for instance, include at least 5, and sometimes up to 15 M. stenopetala trees per 0.1 ha. Farmers practice permanent multi-storeyed cultivation with M. stenopetala at the uppermost level, Carica papaya, coffee and bananas in the upper-middle level, cassava, maize and sugar cane in the lower-middle level and cotton and pepper in the lowest level.

Pollution control: One of the most promising potential uses of M. stenopetala is to purify turbid water. The seeds of this and some other species of the Moringaceae have flocculating and anti-microbial properties. The active substances are found only in the cotyledons of the seeds.

GERMPLASM MANAGEMENT
Cold temperatures inhibit seeds of M. stenopetala; under low temperatures (at and below 15 deg C) an enforced dormancy has been found to occur.
The speed of germination of untreated seeds depends on temperature, humidity and watering. Seeds placed at 8 deg. C in a refrigerator for 24 hours before sowing showed 88% germination in an experiment.
The seeds remain viable for several years as evidenced by germination rates of 96-98% recorded for 44 month-old seeds.

PESTS AND DISEASES
M. stenopetala is more resistant to insect pests than other species of its family. Most farmers in its natural range report that they never saw diseases or pests on this tree. On deep generic ferrasols, the seeds have been found to be attacked by insects after sowing.

FURTHER READNG

Bezabeh K. 1993. Other medicinal uses of Moringa stenopetala. Agroforestry Today. 5(1):18

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Mayer FA and Stelz E. 1993. Moringa stenopetala provides food and low-cost water purification. Agroforestry today. 5(1): 16-18.

Teketay D. 1995. The effect of temperature on the germination of Moringa stenopetala, a multipurpose tree. Tropical Ecology. 36(1):49-57.

von Maydell HJ. 1986. Trees and shrubs of the Sahel - their characteristics and uses. GTZ 6MBH, Eschborn.

SUGGESTED CITATION

Orwa C, Mutua A , Kindt R , Jamnadass R, Simons A. 2009. Agroforestree Database:a tree reference and selection guide version 4.0 (http://www.worldagroforestry.org/af/treedb/)